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A study was designed to determine whether different training procedures could change specific behaviors of 39 intern teachers and their pupils in secondary school social studies classes. Interns were randomly assigned to four training groups each of which received typescripts from the 1953 McCarthy investigations which were to be used the next day in developing pupil "translation" behaviors during class discussion of the typescripts. The four treatments were (1) unstructured discussion of the material, (2) oral instruction in the use of teacher translation tactics relative to the material, (3) videotaped demonstration of teacher translation tactics being used to develop pupil oral translations of the material, (4) combination of the oral instruction and the videotaped demonstration. Audiotape recordings of the interns teaching the McCarthy lesson provided data for measuring pupil oral translation and seven teacher translation tactics; written tests given at the end of the period provided a measure of pupil translation ability. Two independent raters scored the tapes and tests. Analyses of variance and the Kruskal-Wallis test of results indicated that treatment 1 was significantly inferior to the others, and the Newman-Keuls test indicated significant differences (.05 level) between treatment 4 and treatments 2 and 3, favoring the combination treatment. (JS)

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COMPARISON OF FOUR TEACHER TRAINING PROCEDURES IN ACHIEVING TEACHER AND PUPIL "TRANSLATION" BEHAVIORS IN SECONDARY SCHOOL SOCIAL STUDIES[1]

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Abstract: The study provides evidence regarding the relative effectiveness of four commonly used teacher training procedures: (1) unstructured discussion, (2) oral instruction, (3) videotaped demonstration, and, (4) demonstration combined with oral instruction. The intended behavior consisted of "translation" of a given piece of material in class discussion, and both teacher and pupil "translation" behaviors were measured. The experiment included thirty-nine social studies intern teachers in the Stanford Secondary Teacher Education Program. The results support the use of demonstrations combined with presentations in transmitting certain complex behaviors to teachers.

The purpose of the study was to determine whether different training procedures could change specific behaviors of intern teachers and their pupils in secondary school social studies classes. Four training procedures were compared in the study: (1) an unstructured discussion of material that was to be taught later in a social studies class; (2) oral instruction on how to teach the material; (3) a videotaped demonstration on how to teach the material; and (4) a combination of the oral instruction and demonstration procedures.

[1] Presented at the annual meeting of the American Educational Research Association; Los Angeles, 1969.

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The instruction and demonstration training procedures emphasized the development of "translation," during a class discussion of typescript from the "McCarthy investigations" (U.S. Senate, Subcommittee Investigations, 1953). Translation was defined as statements about the meanings of written words and combinations of written words in light of the context in which the words were used. Pupil translation statements, both written and expressed in discussion, were measured. Seven types of teacher behavior ("translation tactics") were measured: translation directions, elicitations, acceptances, rejections, probes, restatements, and periods of silence. An example of a translation elicitation followed by a translation statement would be as follows:

Teacher: What does 'nightmare world' mean here?"

Pupil: "It seems to me that by 'nightmare world' Mr. Wechsler is trying to say that the committee is twisting things around."

PROCEDURE: Thirty-nine social studies intern teachers in the Stanford Secondary Teacher Education Program were randomly assigned to the four training groups. All of the interns received classroom sets of the McCarthy material. One training group participated in an unstructured discussion of the McCarthy material; a second group was orally instructed in the use of the teacher translation tactics relative to the McCarthy material; a third group viewed two videotapes demonstrating the teacher translation tactics being used to develop pupil oral translation of the McCarthy material; the fourth group received oral instruction in the use of the translation tactics and also viewed the two demonstration videotapes.

During one of the two days following their training, the interns taught the McCarthy lesson in one of the secondary school social studies classes which they normally taught. These experimental lessons were recorded on audio-tape, and toward the end of the lessons the tests of written translation ability were administered. The classroom recordings provided the data for measuring pupil oral translation and the teacher translation tactics; while the written tests provided a measure of pupil written translation ability.

Two raters who had achieved at least 90 percent interrater agreement on the translation categories, independently and without knowledge of experimental treatments, scored the audiotapes.

The written tests were also scored by two raters who had achieved over 90 percent agreement on the test items. The reliability of the test was estimated as .82.

RESULTS AND DISCUSSION: The means and standard deviations of the frequencies of pupil oral translation and teacher translation tactics and the test scores on pupil written translation are reported in Table 1. (See the following page).

An analysis of variance of these results indicated that the difference between treatments on pupil oral translation and teacher translation tactics were statistically significant at the .01 level. The difference between means on the pupil written translation was not significantly different from chance.

Comparisons were made between all pairs of treatments for the mean frequencies of pupil oral translation and teacher translation tactics by means of the Newman-Keuls test. These comparisons revealed that the effects of treatment four (oral instruction plus demonstration) were significantly different ($p < .05$) from the other three treatment groups on both pupil oral translation and teacher translation tactics. However, there were no significant differences between any other pair of treatments, nor were there any significant treatment differences on the written translation test scores.

Because it seemed unlikely that the assumptions of normality of distribution and homogeneity of variance had been met, the data were analyzed further by the nonparametric Kruskal-Wallis test. This procedure revealed that treatment one (unstructured discussion) produced significantly fewer ($p < .05$) pupil translation behaviors and teacher translation tactics than did any of the other three treatments. No other significant differences were found.

Table 1

Means And Standard Deviations, Within Experimental Treatments, For The Frequency Of Occurrence Of Pupil Oral Translation And Teacher Translation Tactics And The Test Scores For Pupil Written Translation

	Pupil Oral Translation		Teacher Translation Tactics		Pupil Written Translati Test Scores (Number incorrect)	
Experimental Treatment	Mean	S.D.	Mean	S.D.	Mean	S.D.
(1) Unstructured Discussion	0.27(11)*	0.90	0.91(11)	2.70	6.93(11)	1.94
(2) Oral Instruction	5.70(10)	5.89	12.90(10)	11.81	6.45(7)	1.71
(3) Demonstration	5.20(10)	4.13	11.20(10)	8.50	6.92(9)	2.15
(4) Oral Instruction + Demonstration	10.88(8)	7.47	26.38(8)	20.33	5.54(7)	2.19

*Sample Size indicated in parentheses.

Discussion

The statistical analyses of the results of the four training procedures indicated that the unstructured discussion procedure (treatment one) was significantly inferior to the other three training procedures. The more stringent parametric tests indicated that the differences between treatment four and treatments two and three were significant at the .05 level; however, these results might be questionable if assumptions of the parametric test were violated.

The data did not show any difference between treatments on the measure of pupil written translation. The findings question the efficiency of translation-oriented discussions as a means of developing pupil written translation; they suggest that teacher translation tactics may not fulfill the function of developing pupil oral translation as much as they serve to assess pupils' abilities to translate material that has been read.

Another possibility is that discussions which are oriented toward behaviors other than translation may demand varying degrees of unspoken translation. For example, if a teacher asks, "Is McCarthy being fair in making this accusation?", the pupil may find it necessary to translate the accusation before making a judgment of fairness.

Conclusions

The results of the experiment, although not conclusive, suggested that the behavior of intern teachers, relative to the attainment of a specified class of pupil behaviors, could be affected by relatively short presentation-type training procedures. The evidence indicated that either oral instruction or demonstration presentations alone could change the behavior of intern teachers, but that a combination of the two procedures may have resulted in more of the intended behavior than either procedure alone. It is important to note that these behavior changes were brought about without employing overt practice or feedback as part of the training.

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